

CLAIMS

1. A method for manufacturing a bared optical fiber in which a laser beam is applied to a coated optical fiber:
 - to fuse a coating if a coating material has a lower melting point as compared with a material of the bared optical fiber;
 - to fuse and volatilize the coating if the coating material has a lower volatilizing point as compared with the material of the bared optical fiber;
 - to sublimate the coating if the coating material has a lower sublimating temperature as compared with the material of the bared optical fiber; or
 - to thermally oxidize and decompose the coating if the coating material has a lower thermally oxidizing temperature as compared with the material of the bared optical fiber; or
 - to fuse, fuse and volatilize, sublimate, or thermally oxidize and decompose the coating if the coating material has a higher index of absorption of a laser beam as compared with the material of the bared optical fiber, thereby removing the coating.
2. A method for manufacturing a bared optical fiber in which a laser beam is applied to a coated optical fiber:
 - to photolyze a coating if a coating material is easily photolyzed as compared with a material of the bared optical fiber; or
 - to photolyze the coating if the coating material has a higher index of absorption of a laser beam as compared with the material of the bared optical fiber, thereby removing the

coating.

3. The method for manufacturing a bared optical fiber according to claim 1 or claim 2, wherein the laser beam is collected in the shape of a belt or a line and is applied to the coated optical fiber in an axial direction of the coated optical fiber or in a direction crossing the axial direction.

4. The method for manufacturing a bared optical fiber according to claim 1 or claim 2, wherein plurality of laser beams are applied to the coated optical fiber from different directions.

5. The method for manufacturing a bared optical fiber according to claim 1 or claim 2, wherein the laser beam is applied to the coated optical fiber while the laser beam is being moved in an axial direction of the coated optical fiber or in a direction crossing the axial direction.

6. The method for manufacturing a bared optical fiber according to claim 1 or claim 2, wherein plurality of laser beams are applied to the same portion of the coated optical at the same time.

7. The method for manufacturing a bared optical fiber according to claim 1 or claim 2, wherein the coated optical fiber is a coated optical multi fiber having bared optical fibers integrally formed by means of the coating material.

8. The method for manufacturing a bared optical fiber according to claim 1, wherein the laser beam is generated by a carbon dioxide gas laser.

9. The method for manufacturing a bared optical fiber

according to claim 1, wherein the laser beam is generated by a semiconductor laser.

10. The method for manufacturing a bared optical fiber according to claim 2, wherein the laser beam is generated by an excimer laser.

11. The method for manufacturing a bared optical fiber according to claim 1 or claim 2, comprising a means that exhausts gas generated when the laser beam is applied to the coated optical fiber.

12. The method for manufacturing a bared optical fiber according to claim 11, comprising a means that makes a cyanogen gas of the exhausted gas react with an alkaline liquid to dissolve the cyanogen gas in the alkaline liquid.

13. The method for manufacturing a bared optical fiber according to claim 12, further comprising a means that further decomposes the dissolved cyanogen by ozone.

14. The method for manufacturing a bared optical fiber according to claim 1 or claim 2, wherein inert gas is introduced to a portion of the coated optical fiber to which the laser beam is applied.

15. A device for manufacturing a bared optical fiber, comprising a laser applying part that applies a laser beam to a coated optical fiber to remove a coating of the coated optical fiber.

16. The device for manufacturing a bared optical fiber according to claim 15, wherein the laser applying part collects a laser beam on the coated optical fiber in the shape of a belt

or a line and applies the laser beam to the coated optical fiber in an axial direction of the coated optical fiber or in a direction crossing the axial direction.

17. The device for manufacturing a bared optical fiber according to claim 15, wherein the laser applying part applies plurality of laser beams to the coated optical from different directions.

18. The device for manufacturing a bared optical fiber according to claim 15, wherein the laser applying part applies the laser beam to the coated optical fiber while the laser beam is being moved in an axial direction of the coated optical fiber or in a direction crossing the axial direction.

19. The device for manufacturing a bared optical fiber according to claim 15, wherein the laser applying part applies plurality of laser beams to the same portion of the coated optical fiber at the same time.

20. The device for manufacturing a bared optical fiber according to claim 15, wherein the laser applying part applies the laser beam to a coated optical multifiber having bared optical fibers integrally formed by means of the coating material to remove the coating.

21. The device for manufacturing a bared optical fiber according to claim 15, wherein the laser applying part has a carbon dioxide gas laser, a semiconductor laser, or an excimer laser.

22. The device for manufacturing a bared optical fiber according to claim 15, further comprising a means that exhausts

gas generated when the laser beam is applied to the coated optical fiber.

23. The device for manufacturing a bared optical fiber according to claim 22, further comprising a means that makes a cyanogen gas of the exhausted gas react with an alkaline liquid to dissolve the cyanogen gas in the alkaline liquid.

24. The device for manufacturing a bared optical fiber according to claim 23, further comprising a means that further decomposes the dissolved cyanogen by ozone.

25. The device for manufacturing a bared optical fiber according to claim 15, further comprising a means that introduces inert gas to a portion of the coated optical fiber to which the laser beam is applied.